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Environment :

# James Hansen's 'exit strategy' from global warming

- Debate - Ecology -

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**James Hansen has long been recognised as the world's foremost climate scientist. He recently retired from the directorship of the Goddard institute for Space Studies, as he put it, to spend more time campaigning against climate change.**

He is a long-time thorn in the side of successive US administrations on the issue and is famous for warning the US Congress about the dangers of global warming as long ago as 1988. He is also a militant climate activist and was arrested in a protest over the Keystone XL pipeline designed to transport Alberta tar sands to the Gulf of Mexico. More recently he has been prominent for raising the issue of an 'exit strategy' from fossil fuel dependency.

He first raised the issue of an exit strategy at a US congressional hearing in 2008 under the George W Bush administration. By 'exit strategy' he means a strategy that would achieve the required reduction in CO<sub>2</sub> emissions before the tipping point (or climate cliff) when global warming spirals out of human control. Climate science tells us that this is likely to happen when the global average temperature rises by somewhere between 1.5°C and 2°C over preindustrial levels. All current 'solutions' on offer, he argues, even the most radical, are flawed in that they fail to offer a credible means of implementation before such a situation is reached.

In 2009 Hansen made his exit strategy the main concluding action proposition of his most important book on global warming, *Storms of My Grandchildren*.

It was slow to make an impact on the environmental movement, however, until February 2013 when an article by John Bellamy Foster in *Monthly Review* entitled *James Hansen and the Climate Exits Strategy* gave it strong support. Foster is not uncritical of the proposal but he acknowledges the need for such a strategy and sees the central principle it advocated as an important starting point towards an effective exit approach.

Since his article was the proposal has been taken a bit more seriously on the left and the eco-left. There was an introduction on it at *Historical Materialism* last year (introduced by Anders Ekeland a member of the Norwegian Socialist Left Party). The International Socialist Organisation in the USA has discussed it (though without drawing conclusions) and there has been some limited discussion on within the FI on it.

Hansen is not an anti-capitalist, of course, and he "cautiously" supports nuclear power as one of the 'alternatives' to fossil fuel "provided that the dangers of this form of energy can be substantially reduced". This is a big qualification, of course, since such technology does not exist. Despite this position on nuclear energy, however, he is militantly anti-establishment on global warming.

What motivates him is what he sees as a looming and potentially irreversible planetary crisis. Over the past 100 years the global average temperature has risen by around 0.8°C. Half of this, however, has been since 1980 and the rate of increase is accelerating. The current level of 400ppm carbon in the atmosphere came earlier than most had expected. When Hansen published *Storms of My Grandchildren*, in 2009, he predicted that 400ppm would be reached by 2025. It came 12 years earlier in 2013.

The arctic summer sea ice and Greenland and polar ice caps are retreating faster than previously estimated. This will cause sea levels to rise, threatening coastal regions and island communities throughout the globe. Extreme weather events (droughts, storms, floods) will be far more common. It is a very dangerous situation.

J B Foster puts it this way: "The world at present is fast approaching a climate cliff. Science tells us that an increase in global average temperature of 2°C (3.6°F) constitutes the planetary tipping point with respect to climate change, leading to irreversible changes beyond human control. A 2°C rise is sufficient to melt a significant portion of the world's ice due to feedbacks that will hasten the melting. It will thus set the course to an ice-free world. Sea level will rise. Numerous islands will be threatened along with coastal regions throughout the globe. Extreme weather events (droughts, storms, floods) will be far more common. The paleoclimatic record shows that an increase in global average temperature of several degrees means that 50 percent or more of all species—plants and animals—will be driven to extinction. Global food crops will be negatively affected."

Hansen argues that simply slowing down the rate of carbon emissions is far from enough. That if the climate cliff is to be avoided the rising carbon content of the atmosphere does not just have to be halted but it has to be reversed and taken back to 350ppm by the end of the century. That is the explicit message, he argues, that science provides. We have to accept that the only safe thing to do with fossil fuels is to leave them in the ground—starting with coal, which is the dirtiest.

At the moment fossil fuels are the cheapest form of energy, partly because of their energy density but also because the price of them does not take into account their full cost to society.

This implies that an exit strategy from fossil fuel based energy is necessary within a few decades if disaster is to be averted. The question is what kind of exit strategy will bring such a thing about? That is the question that Hansen is addressing.

Up to now all attempts to halt the rise in CO<sub>2</sub> emissions, including the Kyoto Protocol and subsequent climate negotiations, have failed miserably—particularly with those countries most responsible for climate change. In fact emissions have continued to rise in every part of the world. Current measures, usually based on cap and trade or other market mechanisms, have not only been ineffective they have been used as a cynical cover for doing nothing since they would not resolve the problem even if implemented. Many governments have used the economic crisis to reverse even the meagre measures they had already taken.

There is not, Hansen accepts, a silver bullet that will halt global warming. But there is an urgent need for a big impact idea, which, in conjunction with other measures, most crucially a massive transformation of the energy infrastructure to renewables, that would tackle the problem in the timescale available.

He rejects cap-and-trade as a useless con and advocates instead what he calls a fee-and-dividend system to facilitate the transition to a carbon free economy. His proposal is to make CO<sub>2</sub> emissions prohibitively expensive whilst fully compensating the majority of the population, by definition the poorest sections of society, for the effects of the increases.

This would be achieved by placing a uniform fee (or a tax) on the fossil fuel companies for each ton of carbon they produce at source—i.e. at the pithead, the wellhead or at the port of entry. The result would be to increase the price of goods in the shops that had been manufactured and/or transported by fossil fuel along with fossil fuel used for domestic purposes. The fee would start low and increase annually until renewable energy is competitive with fossil fuel.

Under the dividend part of the scheme the total amount of money collected each month from the fees would be divided evenly between all adult residents of the country with half shares for children up to two children per family - though restricting this to two children is in my view problematic. Those who reduced their carbon footprint the most would benefit the most. They will be motivated to save as much of their dividend payment as possible rather than

spending it on increasingly expensive fossil fuels. They can do this by changing over to energy efficient lighting and appliances, upgrading their insulation and replacing energy inefficient boilers and by switching to green energy sources. Equally with businesses the incentive would be to become more energy efficient and convert to green energy, otherwise they would become uncompetitive.

The dividend would be transferred directly into each person's bank account or onto an electronic card if they do not have a bank account. Hansen gives the following example of how it would work:

"As an example. Consider the point in time at which the fee will reach the level of \$115 per ton on carbon dioxide. A fee of that level will increase the cost of Gasoline by \$1 per gallon and the average cost of electricity by around 8 cents per kilowatt-hour. Given the amount of oil, gas, and coal sold in the US in 2007, \$115 per ton will yield \$670bn. The resulting dividend will be close to \$3,000 per year, or \$250 per month for each adult resident. A family with two or more children would receive in the range of \$8,000 to 9,000 per year."

Some 60 percent of the population would receive net economic benefits from this: i.e., the dividends they received back would exceed the increased prices paid—and these net benefits would increase if they were to reduce their carbon footprints further. And since this is a fee imposed on fossil-fuels companies, who are among the biggest users of fossil fuels, it would give them the incentive to develop alternative energy sources and keep the fossil fuels in the ground."

It would, Hansen argues, be a form of progressive taxation since those with the most expensive lifestyles will pay out a lot more than the \$9,000 they will get back in dividend. He calculates that the results of the scheme should be that the 40% of richer people should end up paying more whilst the 60% would directly benefit. Low-income people can gain by limiting their emissions, he argues. "People with multiple houses, or who fly around the world a lot, will pay more in increased prices than they obtain in the dividend".

He says that he prefers this system because he does not trust governments to do it through taxation because they are not only politically suspect but they are "virtually arms of the fossil fuel industry"—and in any case not everyone is on a pay role. If the fees are distributed directly to the public, he argues, people will be prepared to allow them to rise to high and effective levels unlike the ineffective cap and trade schemes.

Economic modeling for the US Hansen argues: "shows that [even] a mere \$10 per ton CO2 fee, rising by \$10 each year, would reduce emissions by 30 percent after a decade—more than a factor of 10 greater than the oil carried by the proposed Keystone XL pipeline, rendering that pipeline superfluous".

J B Forster argues that: "The advantage of Hansen's fee and dividend scheme from a climate change standpoint is that it is directly aimed at making the fossil-fuel companies—those who take the fossil fuels out of the ground—pay, while increasing the price of carbon to decrease consumption in every nook and cranny of the economy. It also makes it possible to raise carbon prices to the extent required for a rapid phase out of fossil fuels, while garnering the necessary mass support. —The public will only allow an adequate rising price on carbon," he contends, —if the system is simple and transparent with the proceeds distributed to the public".

A fee and dividend scheme would also, Hansen insists, have to go alongside a wide range of mitigation and conservation measures including reusing, recycling, rationing, energy reduction and retention measures and global changes in farming and forestry practice to reduce the amount of chemicals used and to enhance carbon retention and storage in the soil.

It would be very difficult to persuade governments, even relatively progressive ones to implement such a scheme of

course"and Hansen has been lobbying some of them on it. And it would not be fully effective until all governments adopted it, though he argues for individual governments to adopt it as an example. But there are no easy solutions on offer. Any proposal capable of tackling the problem would be just as difficult to implement not only because governments would be just as reluctant to do so but because it would require changes in the way people live"and would require popular consent.

This is the strength of Hansen's proposal. It would stand a far better chance of winning a popular mandate for radical changes than anything else being proposed. This is because it is based on social justice"as expressed in its guaranteed progressive/redistributive content. J B Foster puts it this way: "there is no possibility of instituting an effective carbon price without an approach that takes into account class and power inequalities, and basic issues of justice".

This is very important. We can all spell out what needs to be done. We need a complete change over to renewable energy, an end to productivism, a huge programme of energy conservation, an integrated transport policy and a big reduction in the use of the car, the localisation of food (and other) production where possible, land reform, water conservation, food sovereignty, a big reduction in meat consumption, the protection of habitats and vulnerable species"the list could go on. The problem, however, is how to get such measures accepted and implemented, in a remotely relevant timetable and how to generate popular support for their introduction.

We also have to consider why much of the left is so cautious towards Hansen's proposal, particularly when it does not have an effective exit strategy of its own.

Some, no doubt, are not convinced of the urgency"the tipping point or climate cliff. But many of those who are remain reluctant to endorse his proposal.

One entirely valid reason is that any real reduction in fossil fuel consumption means that almost everything becomes more expensive"it is therefore an anti-working class proposal unless there is an effective and socially just means of compensation. In other words carbon taxes can hit the poorest people in society if they are framed in the wrong way (as with emissions trading schemes for example) or if such inequality is not properly redressed in the totality of the measures taken.

There is a long held opposition amongst many on the left that carbon taxes"or the taxation of pollution as I would call it"is wrong. Carbon taxes don't have to be framed in a regressive way. They can be framed in an entirely progressive way"as is the case with Hansen's proposals"and in such cases we should support them.

In any case we have to be careful, since being critical of everything can mean that you have no alternative strategy and you end up with business as usual. In any case there are major and important carbon taxes in existence"for example taxes of petrol and diesel"which as far as I am aware no one on the left is demanding are abolished. Aviation fuel is free from tax, of course, and most environmentalists rightly demand that this scandalous concession is withdrawn.

Another reason is that Hansen's proposals are designed to function under capitalism, whilst it still exists. This is problematic for those on the left who hold the view that little can be done whilst capitalism exists"given the nature of the system and the drive for profit"and that the answer is a socialist (or indeed an eco-socialist) society. The problem with this, to put it crudely, is that we do not appear to be on the verge of world revolution and therefore when it eventually comes it may be too late to do very much.

J B Foster also makes a concession to this towards the end of his article when he says: Hansen's climate-change exit strategy represents what is clearly a calculated attempt to push through the maximum plan that the regime of capital could conceivably accept, and the minimum necessary to avoid complete disaster. It represents a heroic effort to promote the formation of political-economic conditions that will prevent the world from crossing a catastrophic climate tipping point.

He goes on to say that it does not "address the question of capitalism and the accumulation imperative that drives such a system, which has obvious implications for any long-term strategy of climate or environmental stabilization".

I am not sure, however, that it is true that Hansen's proposal is not objectively a challenge to capitalism since it calls for the system to be run in a completely different "way". In fact Foster himself appears to recognise this at the end of the article arguing that it is objectively revolutionary:

"What is objectively revolutionary in Hansen's proposal is its root in a shared sense of emergency and crisis that can be readily communicated at the center of the system in the monopoly-finance capital economies themselves. The greatest potential of Hansen's steadily increasing carbon fee and dividend is that its results would reverberate in every aspect of the society and economy. It would make clear as never before at the level of everyday life the class nature of carbon footprints and the increasing destruction of the planet as a place of human habitation. And it would soon be evident that the radical kinds of changes that would need to be introduced into the whole constellation of production, distribution, and consumption relations could not be effected except by means of despotic inroads on the rights of property, and on the conditions of bourgeois production; by means of measures, therefore, which appear economically insufficient and untenable, but which, in the course of the movement, outstrip themselves, necessitate further inroads upon the old social order, and are unavoidable as a means of entirely revolutionizing the mode of production."

I strongly agree with that assessment. J B Foster, in my view, has made an important contribution to the struggle against climate change by bringing Hansen's proposal to the attention of the left. Hopefully Hansen's proposal will be taken a lot more seriously as the discussion develops. It is not the finished product as far as an exit strategy is concerned but it is a much-needed big idea with a potentially big impact on the debate and is a good start that should be built on. If the left is going to play a role in that it has to be able to shake off some of the misconceptions of the past.

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